

**AMENDMENTS TO THE CLAIMS**

1. (Canceled)
2. (Canceled)
3. (Previously presented) A system for controlling a bioreactor process, comprising:  
a communication system comprising a first communication network, and a second communication network;  
a controller configured with a bioreactor control process to receive information related to a condition in a bioreactor over said first communication network, to control the conditions in a bioreactor by determining control signals based on the bioreactor control process and information received related to a condition in the bioreactor, and to send the control signals over said communication system to a utility tower over said second communication network; and  
a utility tower, housed separately from the bioreactor and coupled to said controller via said communication system, configured to receive the control signals from the controller over the second communication network and to change a condition in the bioreactor based on the control signals, said utility tower comprising  
a monitoring system that transmits information related to a condition of the bioreactor to said controller via said first communication network,  
a bioreactor supply system which supplies a substance to the bioreactor in response to a control signal received from said controller, and  
an agitation system which agitates the solution in the bioreactor in response to a control signal received from said controller.
4. (Canceled)
5. (Previously presented) The system of Claim 3, wherein said utility tower further comprises a temperature control system which changes the temperature of media in the bioreactor in response to a control signal.
6. (Original) The system of Claim 3, wherein said bioreactor supply system comprises a gas control system that provides a gas to the bioreactor, and a pump control system that provides a fluid to the bioreactor.

7. (Previously presented) The system of Claim 3, wherein said monitoring system comprises transmitters for sending information related to conditions in said bioreactor to said controller.

8. (Original) The system of Claim 7, wherein said transmitters comprise:  
a temperature transmitter for sending information related to a temperature condition of the bioreactor to said controller;

a pH transmitter for sending information related to a pH condition of the bioreactor to said controller; and

a dissolved oxygen transmitter for sending information related to a dissolved oxygen condition of the bioreactor to said controller.

9. (Previously presented) The system of Claim 3, wherein said communication system further comprises a third communication network, and wherein said utility tower further comprises a computer configured to receive information from a user and send the user information to said controller over said third communication network and wherein said controller receives the user information and determines a control signal based on the user information, and sends said control signal based on said user information to said utility tower over said second communication network.

10. (Original) The system of Claim 9, further comprising an input device to enter the user information into said computer.

11. (Original) The system of Claim 9, further comprising an agitation unit connected to said utility tower, wherein said agitation unit provides agitation to said bioreactor based on the agitation control signal received from said agitation system.

12-15 (Canceled)

16. (Previously presented) The system of Claim 3 further comprising:  
a second utility tower, coupled to said controller via said communication system, configured to receive a second control signal and provide support to a second bioreactor based on the second control signal, comprising

a monitoring system that transmits information related to a condition of the second bioreactor to said controller via said communication system,

a bioreactor supply system which provides a substance to the second bioreactor based on the second control signal, and

an agitation system which sends an agitation control signal to the second bioreactor based on the second control signal; and

wherein said controller is configured to receive information related to a condition in the second bioreactor, determine the second control signal based on a second desired bioreactor process and the received information and send the second control signal over said communication system to said second utility tower.

17. (Previously presented) The system of Claim 3, wherein said first communication network comprises a FOUNDATION™ fieldbus, said second communication network comprises a DeviceNet bus, and said third communication network comprises an Ethernet bus.

18. (Original) The system of Claim 6, wherein the temperature control system comprises a cold finger.

19. (Original) The system of Claim 6, wherein the temperature control system comprises a water bath.

20. (Original) The system of Claim 6, wherein the temperature control system comprises a heating pad.

21. (Original) The system of Claim 9, wherein the computer comprises a display screen, and wherein said system is configured to show a graphical representation of said system on said display screen.

22. (Original) The system of Claim 21, wherein said display screen comprises a touch-screen.

23. (Previously presented) The system of Claim 3, wherein the bioreactor process is cell culture growth.

24. (Previously presented) The system of Claim 3, wherein the bioreactor process is microbial fermentation.

25 – 37. (Canceled)

38. (Previously presented) A system for monitoring and controlling a process in a controlled chamber, the process comprising a sequence of steps and at least one parameter relating to a condition of the process, comprising:

a communication system comprising a first communication network and a second communication network;

a controller configured with a chamber control process, and said controller configured to receive information related to a condition in the chamber over the first communication network, and to control the chamber process by determining a control action required to carry out the process based on the chamber control process and the received information, to generate a control signal corresponding to the control action, and to send the control signal over said communication system over the second communication network; and

a utility tower, housed separately from the chamber and coupled to said controller via said communication system, configured to provide information related to a condition in the chamber to said controller via said communication system, to receive the control signal from said controller and to change a condition of the chamber based on the control signal, said utility tower comprising

a monitoring system that transmits information related to a condition of the chamber to said controller via said communication system,

a temperature control system which changes the temperature of the chamber in response to a control signal, and

a chamber supply system which supplies a substance to the bioreactor in response to the control signal.

39. (Canceled)

40. (Previously presented) The system of Claim 6, wherein said gas control system is housed within the utility tower.

41. (Previously presented) The system of Claim 6, wherein said pump control system is housed within the utility tower.

42. (Previously presented) The system of Claim 9, wherein said computer is housed within the utility tower.